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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,238

11/13/2003

Rajeev D. Muralidhar

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7590

11/28/2007

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EXAMINER

PARK, JUNG H

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,238

Applicant(s)

MURALIDHAR ET AL.

Examiner

Jung Park

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Remark

1. This communication is considered fully responsive to the Amendment filed on 09/11/2007.
 - a. An objection to the drawing is withdrawn since it has being amended accordingly.
 - b. An objection to the specification is withdrawn since it has being amended accordingly.
 - c. The rejection of claims 14 and 18 under 112 2nd is not withdrawn since it has not being amended accordingly.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 14-17 and 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. In claims 14 and 18, what is mean by "a central registration point"? The specification does not describe in details why a central registration point is used for registering step. Applicant mentioned that page 11, lines 12-15 and page 12, lines 14-17 describe it, but it is really not enough to convey to one of ordinary skill in the relevant art.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The claimed invention is directed to non-statutory subject matter.

In claim 22, the examiner suggests changing the "machine-readable code containing instructions" to --computer readable medium encoded with computer executable instructions--

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 18-21, and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya et al. (US 7,136,357, "Soumiya") in view of McCormick et al. (US 2002/0083260, "McCormick").

Regarding claim 1, Soumiya discloses a system, comprising:

- a control processor (a processor, not shown, for controlling functions in MPLS router, see fig.8) configured and arranged to execute a control portion of an interior gateway signaling protocol (using RSVP-TE, see 116 fig.8; col.4, ln.10; fig.6; and col.9, ln.24-25); and a table of label switched paths (table for LSPs, see fig.7; fig.8; and col.10, ln.21-27);
- a line processor (a processor, not shown, for traffic engineering, see fig.8-9) configured and arranged to execute an offload portion of an interior gateway signaling protocol (packet forwarding through traffic engineering, see 116, 114, and 111 fig.8); and

at least one timer (a timer, not shown, for time period, see fig.12 and col.10, ln.27-37) associated with each label switched path (LSPs, see col.10, ln.27-37); and

- a device to allow the control card and the line card to communicate (a device for communication for sections described in fig.8).

Soumiya does not explicitly disclose the limitations of "a control card, a line card, and a backplane to allow the control card and the line card to communicate." However, McCormick discloses a plurality of dedicated line card comprising a line processor for each dedicated line card (fig.1) and the examiner takes an official notice that a backplane is a circuit board to connect board/line cards together to make up a complete computer or network system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a line card comprising a line processor taught by McCormick into each of the plurality of units in the MPLS router of Soumiya so that a control card as a central control card, a line card comprising a line processor for each of the plurality of units and a backplane for communication among line cards for the functions/units in the MPLS router of Soumiya with the motivation of backplane's greater reliability and its convenience when line cards are added to or removed from the system.

Regarding claim 2, Soumiya disclose, "the control processor further comprising a general-purpose processor (inherent to have a general-purpose processor in the MPLS router for some other execution, see fig.8)."

Regarding claim 3, Soumiya does not explicitly disclose, "the control processor further comprising an Intel Architecture processor." However, it would have been an

obvious matter of user's decision to a person of ordinary skill in the art to use one of available processors at the time of invention was made with the motivation of considering costs and reliability of a system.

Regarding claim 4, Soumiya discloses, "the line processor further comprising a network-enabled processor (processor for MPLS router, see fig.8)."

Regarding claim 5, Soumiya does not explicitly disclose, "the line processor comprising an Intel IXP processor." This claim is rejected for the same reasons and motivation set forth in the rejection of claim 3.

Regarding claim 6, Soumiya discloses, "the backplane further comprising a physical backplane connection." This claim is rejected with the same reasons and motivation set forth for the backplane in claim 1.

Regarding claim 7, Soumiya discloses, "the backplane further comprising a network (fig.8)."

Regarding claim 18, Soumiya discloses a method of establishing a control portion of a distributed exterior gateway protocol, comprising:

- initializing a control unit (inherent to initialize a unit when power of a system is ON, see fig.8);

- registering a control portion of a protocol (RSVP-TE, see fig.8-9) to be executed by the control unit with a central registration point (registering using a link pointer to a label stack, see col.7, ln.64-67);
- setting up control connections with units executing offload portions of the protocol (LSP setup, see fig.8);
- configuring the units by providing information with regard to signaling peers (fig.6), link switched paths (LSPs, fig.6), and link switched path timeout periods (time period, see fig.12 and col.10, ln.27-37); and
- performing central signaling protocol functions (RSVP TE functions, see fig.8).

Soumiya does not explicitly disclose the limitation of "a control card and a line card". However, this claim is rejected for the same reasons and motivation set forth for the cards in the rejection of claim 1.

Regarding claim 19, Soumiya discloses, "registering a control portion of a protocol to be executed further comprising registering the control portion with a distributed control plane architecture infrastructure module (registering using a link pointer to a protocol control section, see fig.8 and col.7, ln.64-67)."

Regarding claim 20, Soumiya discloses, "performing central signaling protocol functions further comprising controlling admission to the signaling connections (path selection, see fig.8)."

Regarding claim 21, Soumiya discloses, "performing central signaling protocol functions further comprising setting quality of service parameters (traffic characteristic, see fig.1C)."

Regarding claim 26, it is a claim corresponding to claim 1, except the limitation of "a control and a local version of a link state database (link state databases, see 113A & 114A fig.8 and col.10, ln.21-37)" and is therefore rejected for the similar reasons set forth in the rejection of claim 1.

Regarding claims 27-29, 31, and 32, they are claims corresponding to claims 2-4, 6, and 7, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

8. Claims 8, 10-13, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Hayashi et al. (US 2002/0083174, "Hayashi") and further in view of McCormick.

Regarding claim 8, Soumiya discloses a method of handling an interior gateway signaling protocol, comprising:

- receiving configuration information from a control unit (as shown in fig.8), the control unit executing a control portion of the interior gateway signaling protocol (using RSVP-TE, see 116 fig.8; col.4, ln.10; fig.6; and col.9, ln.24-25);
- establishing connections with peer devices in a unit (between LSRs, see fig.6) configured and arranged to execute an offload portion of the interior gateway signaling protocol (packet forwarding through traffic engineering, see 116, 114, and 111 fig.8);

- executing at least one state machine for each connection established (state machine for state checking for paths, see col.55, ln.55-67);
- exchanging and validating signaling protocol messages with peer devices (RSVP LSP Tunnel messages, see fig.6 and col.9, ln.24-54+); and

Soumiya lacks what Hayashi discloses, "communicating with a control card if there is a failure or a connection status change (LSP failure, see fig.24 and ¶.18)."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a status of path/link failure of Hayashi into the system of Soumiya in order to prevent traffic being lost for reliability of the network.

Soumiya does not explicitly disclose the limitation of "a control card and a line card". However, this claim is rejected for the same reasons and motivation set forth for a control card in the rejection of claim 1.

Regarding claim 10, Soumiya discloses, "receiving configuration information from a control card further comprising receiving RSVP-TE configured peers (using RSVP-TE, see 116 fig.8; col.4, ln.10; fig.6; and col.9, ln.24-25), incoming and outgoing interface for each label switched path (fig.8), and session timeout values for each label switched path (time period, see fig.12 and col.10, ln.27-37)."

Regarding claim 11, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP-TE HELLO messages (hello packet, see col.25, ln.24)."

Regarding claim 12, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP PATH messages (Path message, see fig.6)."

Regarding claim 13, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP RESV messages (Resv message, see fig.6)."

Regarding claim 22, it is a claim corresponding to claim 8 and is therefore rejected for the similar reasons set forth in the rejection of claim 8.

Regarding claims 23, 24, and 25, they are claims corresponding to claims 11, 12, and 13, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

9. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Hayashi et al. (US 2002/0083174, "Hayashi") and further in view of McCormick.

Regarding claim 14, Soumiya discloses a method of establishing an offload portion of a distributed interior gateway protocol, comprising:

- initializing a unit (inherent to initialize a unit when power of a system is ON, see fig.8);
- registering an offload portion of a protocol (routing and forwarding, see fig.8-9) to be executed by a line processor of the unit with a central registration point (registering using a link pointer to a label stack, see col.7, ln.64-67);

- setup a control connection with a control unit (LSP setup, see fig.8), the control unit including a control processor executing a control portion of the protocol (LSP protocol, see fig.8 and col.10, ln.38-44);
- transmit data resource data to the control unit (bandwidth data, see 116C fig.8 and col.10, ln.63-67);
- receiving configuration information from the control unit (control units, see 113-116 fig.8);
- establishing signaling connections with interior gateway peers (RSVP-LSP setup, see fig.6); and
- performing signaling protocol functions at the line unit (RSVP-TE, see fig.8-9).

Soumiya does not explicitly disclose the limitation of "a control card and a line card". However, this claim is rejected for the same reasons and motivation set forth for the cards in the rejection of claim 1.

Soumiya lacks what Hayashi discloses, "communicating with the control card by the line-card during failures or signaling connection changes (LSP failure, see fig.24 and ¶.18)." Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a status of path/link failure of Hayashi into the system of Soumiya in order to prevent traffic being lost for reliability of the network.

Regarding claim 15, Soumiya discloses, "registering an offload portion further comprising registering with a distributed control plane architecture infrastructure module (registering using a link pointer to a protocol control section, see fig.8 and col.7, ln.64-67)."

Regarding claim 16, it is a claim corresponding to claims 11-13 and is therefore rejected for the similar reasons set forth in the rejection of claims 11-13.

Regarding claim 17, Soumiya discloses, "performing signaling protocol functions further comprising executing at least one state machine for each signaling connection (state machine for state checking for paths, see col.55, ln.55-67)."

Response to Arguments

10. Applicant's arguments with respect to claim 1 have been considered but are not persuasive.

At page 12, applicant argues that Soumiya and McCormick fail to disclose the limitations of "a control processor and a line processor respectively implementing a control portion and an offload portion of the interior gateway signaling protocol recited in claims 1, 18 and 26.

In reply, Soumiya discloses at least one processor for the control portion of link management protocol and an offload portion of the interior gateway signaling protocol, but does not disclose that each of the protocols is implemented in a control processor and a line processor, respectively. That is, Soumiya discloses the claimed functions in a single processor, but fails to disclose an individual device/module for each of the protocols/functions. However, McCormick discloses the deficiency of Soumiya by explicitly disclosing a central processor and a line card with a processor in an individual device/module, respectively. Therefore, ordinary person in the art applies the individual processor for each function taught by McCormick into the system of Soumiya so that each of the control portion and offload portion is implemented in a separate card for

respectively for preventing whole system being down from losing of the control function in the system. Therefore, the examiner respectively disagrees.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 6:15-3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

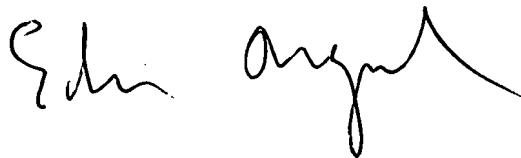
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JP
Jung Park
Patent Examiner

EDAN .ORGAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Edan .Orgad', written in a cursive style.